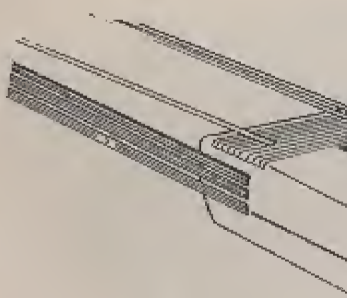

QUICKSI

Fast

IEEE

Skyles Elect

QUICKSILVER

FAST IEEE INTERFACE

INSTRUCTION MANUAL

by

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QUICKSILVER TABLE OF CONTENTS

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Introduction

Congratulations on purchasing QUICKSILVER, the fastest IEEE cartridge for the Commodore C-64 and C-128/64 computers. QUICKSILVER will greatly increase the speed of loading and saving programs and files from the Commodore 2031, 2040, 4040, 8050, 8250, SFD1001, and MSD SD1, SD2, disk drives, and the Commodore 64/128 computer.

In addition to being the fastest IEEE disk drive enhancement available for the Commodore 64/128 and IEEE disk drives, over 55 added computer commands are included. These commands will make using your Commodore 64/128 much faster and easier. It is not necessary that you learn or use these commands. Install the QUICKSILVER cartridge and enjoy a whole new world of speed.

WHAT QUICKSILVER WILL NOT DO

QUICKSILVER will not, repeat, not fix or improve the loading of a marginal or non functioning disk drive. QUICKSILVER will not speed up a program load or file transfer that involves lots of blinking of the red error light on the IEEE disk drive. If you are having trouble (lots of error light blinking) with just one or two disks, and the rest work okay, replace your faulty disks. If you are having trouble loading all your diskettes, your disk drive usually needs cleaning, lubricating, aligning, or electronic repair. See your dealer for the appropriate fix before you attempt to install QUICKSILVER. If you do not have a local dealer capable of these repairs, contact Commodore, MSD, or Skyles Electric Works.

Introduction

Skyles Electric Works warrants the QUICKSILVER Cartridge parts and labor for 4 months from date of purchase. Please take a moment now to fill out and return the postpaid warranty card.

Installation instructions start on page 29. They are at the end of the manual because they are used only once and then hopefully forgotten. Please turn to page 29 and start enjoying your QUICKSILVER.

Starting on the next page is a quick reference card covering the extra computer commands added by QUICKSILVER.

ENJOY

QUICKSILVER REFERENCE

Symbology

Capital letters for keys struck
<CTRL> refers to a single key struck
<SHIFT><RUN/STOP> strike two keys together

Command	Performs
Easy Everyday/DOS-Wedge Commands	
A: Manual Sw 1	On-Off Quicksilver
B: Manual Sw 2	IEEE-Serial Dev.#8
C: Manual Sw 3	IEEE-Ser. Devs.#9-10
D: Manual Sw 4	IEEE-Serial Dev.#4
E: POKE 148,8 <RET> . .	Ignore Sw. all IEEE
F: POKE 148,72 <RET> . .	Ignore sw. all Ser.
G: POKE 56835,52 <RET> .	Dev #8-10 to FLASH!
H: POKE 56835,60 <RET> .	Dev #8-10 to slow
I: Manual Momentary Sw. .	Reset Computer
J: SYS 64738 <RET>. . .	C-64/128 reset
1: <C=><RUN/STOP>	LOAD":*",8,1
2: <SHIFT><RUN/STOP> . .	RETURN-RUN-RETURN
3: <↑> <RET> "name": PRG	Load/Run "name"
4: <%> name <RET> . . .	LOAD "name",8,1 without links
5: </> name <RET> . . .	LOAD "name"
6: <↑> name <RET> . . .	LOAD/Run "name"
7: LOAD "PRG <RET> . .	LOAD"PRG",8 <RET>
8: <←> name <RET> . . .	SAVE "name"
9: <=> name <RET> . . .	VERIFY "name"
10: <!> <RET>	Enter monitor
11: <!> <RET> XC <RET>.	Reset C-64/128
12: @Q <RET>	Turn off DOS
13: SYS 65526 <RET> . . .	Turn back on DOS
14: @UJ <RET>	1541 soft reset
15: @IO <RET>	Initialize Drive 0
16: @$ <RET>	READ Directory
17: @$:???* <RET>	Dir. with pattern
18: @ <RET>.	READ Error Channel
19: @#x <RET>	Change drive number
20: @CO:NEW=1:OLD <RET> .	COPY a program
21: @DO=1 <RET>	Backup drv.1 to drv.0
22: @R1:NEW=1:OLD <RET> .	RENAME a file
23: @SO:NAME <RET> . .	SCRATCH a File
24: @NO:NAME,ID <RET> . .	NEW a Disk
25: @VO <RET>	VALIDATE a diskette

(note: '@' and '>' are interchangeable)

Command	Performs
Editing Commands	
1: <CTRL><CLR/HOME> . . .	Clear below cursor
2: <CTRL><INST/DEL> . . .	Clear rest of line
3: <RUN/STOP><RESTORE> .	Recover "crashes"
4: SYS 61656 <RET> . .	Enter FLASHMON!
5: <C=>	Enter FLASHMON! on RESET
6: <CTRL><←>	Cursor to bottom of screen
7: <C=><←>	16 Character tab
8: <C=><↑>	Escape Quote mode twice for Insert mode thrice re-enter Quote
9: <CTRL>	Slows Listing speed
10: <SHIFT/LOCK>	Pauses listings
11: <SHIFT><RETURN> . . .	Return without line execution
12: <CTRL><RESTORE> . . .	Enter NMI debugger
13: NMI Debugger	Run time debugger

IEEE-SERIAL Bus Assignment

Device Number	Function
0	Keyboard, automatically
1	Datasette, automatically
2	RS-232, automatically
3	Screen, automatically
4	Switch #4, IEEE-SERIAL
5	SERIAL, automatically
6	SERIAL, automatically
7	IEEE, automatically
8	Switch #2, IEEE-SERIAL
9,10	Switch #3, IEEE-SERIAL
11	SERIAL, automatically
12-31	IEEE, automatically

FLASHMON! Commands

A: <!> <RET>	Enter FLASHMON!
B: SYS 61656 <RET>	Enter FLASHMON!
C: <C=> on powerup	Enter FLASHMON! without RESET
1: M ssss eeee <RET> . . .	List memory from ssss to eeee
2: <:> ssss xx xx <RET> .	Write memory from ssss
3: G ssss <RET>	JMP to location ssss
4: <SHIFT>G ssss <RET> . .	JSR to location ssss
5: T ssss eeee nnnn <RET>	Transfer ssss-eeee to nnnn
6: T ssss eeee-1 ssss+1 .<RET>	Write contents of ssss from ssss+1 to eeee
7: L "NAME" <RET>	LOAD "NAME"
8: L "NAME" ## ssss <RET>	LOAD "NAME" from ## into memory at ssss
9: V "NAME" ## ssss <RET>	VERIFY "NAME" from ## against memory at ssss
10: S "NAME" ## ssss eeee+1 <RET>	SAVE "NAME" on ## from memory ssss to eeee
11: <>>	DOS-Wedge access
12: <@>	DOS-Wedge access
13: <CTRL><RESTORE>	Enter NMI debugger
14: X <RET>	Exit FLASHMON! warm start
15: XC <RET>	Exit, RESET C-64

Notes:

```
ssss, eeee, etc  ;Represent hexadecimal numbers
##               ;Represent device numbers
$02ac            ;Address of input vector
```

Symbology

We have adopted the following symbology for all the commands used in this manual.

First you should note that all the keys on the Commodore 64 and Commodore 128 have upper case letters on their top surface. We refer to all the keys therefore with upper case (capital) letters. If we wish you to strike a series of keys in sequence, like normal typing, we present the the sequence as follows:

If you should type "load" we show LOAD without any quotes or brackets.

Spaces between typing letters are for clarity only. SYS 65526 is exactly the same as SYS65526 to the Commodore 64/128.

If you should strike a function key such as "run/stop", we show <RUN/STOP> with brackets. We have abbreviated "return" to <RET>.

If you should strike two function keys together, we show <SHIFT><RUN/STOP>

If you should strike two function keys one after the other, we show <C=>, <CRTL>. WE use both a comma and a space between keys.

Preface

The QUICKSILVER cartridge contains 4 selection switches and a momentary reset switch. Additional keyboard commands override or modify various of the switch functions. The description of these commands and functions begin on the next page.

The "DOS", or as they are sometimes called, "wedge" commands are a set of minimum keystroke commands for controlling the disk drive. Commodore furnishes a DOS program on the 1541 demonstration disk that accompanies the Commodore 1541 Disk Drive. This program occupies a small part of your computer memory and sometimes interferes with programs. QUICKSILVER I has a DOS program built in. This means that there are no programs to load or fill up memory. These DOS commands work with any Commodore or MSD IEEE disk drive

The major keystroke saving that DOS offers is that the sequence of keystrokes;

OPEN 1,8,15," is replaced by a single keystroke; <@> or < > >.

The alternate command the "greater than" symbol was initially favored and gave the name "wedge" commands to the original DOS program. On the Commodore 64 the ">" requires two simultaneous keystrokes. We recommend that you use the "@" instead.

The DOS wedge is now enabled at powerup. No more 'SYS 65526'! It is no longer a true wedge, but rather traps the crunch tokens vector. You may need to turn off the wedge with the quit command '@q' before using some software.

Cartridge Mounted Switches

Located at the right rear of the QUICKSILVER Cartridge, when it is plugged into the C-64/128, is a bank of 4 DIP switches. Switch number 1 is located farthest from the computer and switch number 4 is located closest to the computer. The on (or select) position is to the right as viewed from the computer keyboard.

Selection Switch Number 1

Switch number 1 located farthest from the computer is the main on-off switch for the QUICKSILVER cartridge. When this switch is to the right the Quicksilver is on or selected. When this switch is toward the left the QUICKSILVER cartridge is off or deselected.

Selection Switch Number 2

When switch number 2 is to the right, all program or keyboard references to device #8, are routed through QUICKSILVER to the attached IEEE bus. When switch number 2 is to the left all keyboard or program references to device #8 are routed to the original C-64/128 serial bus.

Selection Switch Number 3

When switch number 3 is to the right, all program or keyboard references to devices #9 or 10, are routed through QUICKSILVER to the attached IEEE bus. When switch number 3 is to the left all keyboard or program references to devices #9 or #10 are routed through the original C-64/128 serial bus.

Selection Switch Number 4

When switch number 4, located nearest the computer, is to the right, all program or keyboard references to device #4 are routed through QUICKSILVER to the attached IEEE bus. When switch number 4 is to the left, all keyboard or program references to device #4 are routed to the original C-64/128 serial bus.

Command POKE 148,8 <RET>

This command will cause QUICKSILVER to ignore the above 3 selection switches (switches 2 through 4) and send all data and commands via QUICKSILVER to the attached IEEE bus. A few programs will reset this command.

Command POKE 148,72 <RET>

This command will cause QUICKSILVER to ignore the above 3 selection1 switches (switches 2 through 4) and send all data and commands via the original SERIAL port of the computer. A few programs will reset this command.

Command POKE 56835,52 <RET>

This command will transfer in the 1541 FLASH! mode all data and commands to devices numbers 8 through 10 that have been selected for the SERIAL bus by cartridge switches 2 and 3. This command will not be reset by some programs. This command allows complete compatability between 1541 FLASH! enhanced disk drives and QUICKSILVER. POKE 56835,60 <RET> will return to the original slow serial mode.

Cartridge Reset Switch

For user convenience a momentary reset switch is mounted on the left rear of the QUICKSILVER cartridge.

Command SYS 64738 <RET>

Typing 'SYS 64738' and striking the 'RETURN' key will reset the C-64 computer and the C-128 computer in the C-64 mode.

Command <C=><RUN/STOP>
Command <SHIFT><RUN/STOP>

These two commands replace the longer command sequence; LOAD ":*",8,1 <RET> RUN <RET>. Almost all commercial software will load with these command. This pair of commands loads the first program on the diskette in the Disk Drive. If the program you wish to load is not the first one on the diskette, use one of the commands given below.

Command <↑>, <RET> "name": PRG

This command is a very quick and easy way to locate a program on the disk via the directory command '@$' and then load and run the program with very little further typing. Use this command with the directory on the screen. Cursor up to the program listing and then strike the up arrow key followed by the return key. Without further ado the selected program will load and start running.

Command </>, <RET> "name": PRG

These commands are a very quick and easy way to locate a program on the disk via the directory command '@$' and then load the program with very little further typing. Use this command with the directory on the screen. Cursor up to the program listing and then strike the slash key followed by the return key. Without further ado the selected program will load at the normal BASIC program location.

Command <↑> name <RET>
Command </> name <RET>

These two commands have been described on the previous page. These commands also work without having the disk directory on the screen. Note that the program name need not be inside of quotation marks.

Command LOAD "PROGRAM NAME <RET>

This command replaces the longer command; LOAD "PROGRAM NAME",8 <RET> . This will load the program with the name "program name" from the 1541 Disk Drive. You may in any of the load commands substitute an asterisk (*) in place of any or all of the program name. Any combination of letters are substituted for the asterisk. For example; LOAD "PR* <RET> . Will load the first program on the diskette from the following names; "prime number", "prone", "premier", "program name", "promotion" etc.. If you wish to load a program from your cassette recorder you should use the command;

LOAD "PROGRAM NAME",1 .

Command <←> name <RET>

This command is a minimal keystroke command for saving a program to the disk.

Command <=> name <RET>

This command is a minimal keystroke command for verifying a program in memory against the program saved as 'name' on the disk.

Command <!> <RET>

This command is the easiest way to enter the FLASHMON! machine language monitor. Other entry methods and the FLASHMON! commands are described in the FLASHMON! section of this manual.

Command <!> <RET> XC <RET>

This double command will enter FLASHMON! and then immediately exit it with a power up type of complete reset. Not for every occasion, but sometimes very useful.

Command @Q <RET>

This command turns off the DOS-Wedge. There a few programs that require the DOS-Wedge to be turned before they are loaded and run.

Command SYS 65526 <RET>

This command will turn on the DOS-Wedge after it has been turned off by the above command.

Command @UJ <RET>

This commands tells the disk drive to do a reset operation. In most cases it is preferable to to use this command than it is to turn off and then turn on the disk drive.

Command @IO <RET>

Initializes the diskette in the disk drive. Each time a diskette is put into the 1541 Disk Drive that you are planning to save a program or file on, use this command or its long form before you save any program. This command does not disturb any information that is already on the diskette.

Command @$0 <RET>

Reads the directory on the diskette in the disk drive and places it on the screen without disturbing anything that may be in the computer memory. This is the most useful DOS command. Striking the <SHIFT/LOCK> once will pause the listing on the screen. Striking the <SHIFT/LOCK> again will continue the listing.

Command @#9 <RET>

Will change the device number that the DOS addresses. In this example the DOS will automatically address the disk drive that has device number 9. This command may be used to change the device number the DOS addresses to 8, 9, 10, or 11. The DOS is turned on addressing device number 8.

Command @$O:AB??C* <RET>

Reads the program names off the directory on the diskette that match the "wildcard" pattern "ab", followed by 2 symbols (or letters), followed by "C", followed by anything. It is not necessary that the "?" and "*" be used. for example if you want to search for a particular name on a diskette directory use:

@$O:PROGRAM NAME <RET>

Since it is easy to forget whether spaces are or are not included in a name, it is recommended that you use:

@$O:PROGRAM* <RET>

Command @ <RET>

Asks the disk drive why it is being obstinate and blinking its red light instead of loading or saving a program or some other worthwhile function. The disk drive answer is presented on the screen and the red light generally turns off. Prior to issuing this command, it is often necessary to strike the <RUN/STOP> key to regain the cursor. There are 35 different error messages. Each starts with a number, followed by a couple of words and two numbers. A listing is given in the Commodore Disk Drive Instruction Manual. A better listing and explanation is given in "The Anatomy of the 1541 Disk Drive" available from your local dealer or Skyles Electric Works ($19.95 +$3.50 shipping).

If after reading the error message, you wish to reset (clear) the disk drive type; @UJ <RET> the DOS shortened version of the disk drive reset described on page 13.

Command %PROGRAM NAME <RET>

Will load a program without relocation or changing the end links. It is most useful loading machine language or graphics without disturbing the resident BASIC program. If this explanation does not make a lot of sense, ignore this DOS command.

Command @CO:NEW COPY=1:OLD NAME <RET>

Copies a program or 'SEQ' to a second formatted diskette if you have a dual disk drive. This command does not work between two single disk drives. Between drives 1 and 0 you may use the same name for the file. An easy way to do this is to use '*' for the new name. You may also copy to the same diskette provided that 'NEW' is a different name from 'OLD'.

Command @D0=1 <RET>

This makes an exact copy of a diskette if you have a dual disk drive. This command does not work with two single disk drives. The destination disk should be a blank disk. Always put a write protection tab on the source disk. Errors on the source disk are not copied and generally will halt the command with garbage on the destination disk.

Command @R1:NEW NAME=1:OLD NAME <RET>

Changes (renames) the name of a program or file on the diskette in the disk drive. Renaming a file instead of erasing it is very useful for keeping archive copies, when you are developing programs.

Command @SO:PROGRAM NAME <RET>

Scratches (erases) a program or file from the diskette in the disk drive. If you have any doubts about erasing a program, use the "rename" command instead. I never use a "scratch" command after midnight and I find this makes for much happier "mornings after". After the scratch has been attempted type: @ <RET> to find out how many files have been scratched. Many times the number is 0 because of a write protect on, or misnamed file. You may use the "wildcards" "?" and "*" in the file name. Experienced programmers do a pattern match directory command first.

Command @NO:DISK NAME,ID <RET>

Will format (new) the diskette in the disk drive. This completely erases all the information on the diskette. All new blank diskettes need to be formatted (newed) before they can be used in a Commodore compatible disk drive.

DOS Command @VO <RET>

Validates (collects) the diskette in the disk drive. This rearranges the programs and files on the diskette into a more compact order. Sometimes this increases the amount of free space on the diskette. Do not use this command on any diskette that has any "relative" or "random" files on it. If in doubt don't validate.

Preface

The following are a group of twelve commands added to QUICKSILVER to make program writing easier and more enjoyable. If you do not write programs, BASIC or Machine Language, skip this section of the manual. For programmers we also recommend the purchase of "VICTREE" model VT64. VICTREE is a module that plugs into the cartridge port of the Commodore 64 (or the extension port on QUICKSILVER) and adds 42 very useful commands. 15 of the VICTREE commands are programming aids. VICTREE model VT64 is available from your local dealer or contact Skyles Electric Works. The editing commands in this section requires the installation of QUICKSILVER in the Commodore 64/128. The Disk Drive is not directly involved with these commands.

Command <CTRL><CLR/HOME>

Clears the screen, from the line below the line that cursor is on, to the bottom of the screen. In a program the command 'print chr$(2)' will do the same thing.

Command <CTRL><INST/DEL>

Will delete the rest of the line that the cursor is on. In a program the command PRINT CHR$(11)will do the same thing.

Command POKE 650,0 <RET>

QUICKSILVER adds the auto-repeat command to all the keyboard keys. If for any reason you wish to turn off this feature, type 'poke 650,0' and a 'return'. The all key auto-repeat may be turned on by typing 'poke 650,235' and a 'return'.

Editing Command <CTRL><←>

Moves the cursor to the bottom of the screen. In a program PRINT CHR$(6) will do the same thing.

Editing Command <C=><←>

Tabs the cursor 16 spaces from the left side of the screen. This is useful with some assemblers and machine language monitors. In a program PRINT CHR$(7) will do the same thing

Editing Command <C=><↑>

Allows you to "escape" the quote or insert mode. If you wish to get out of the quote mode, strike this command once. If you wish to get out of the insert mode, strike this command twice. If you are in neither mode and wish to enter the quote mode, strike this command 3 times

Editing Command <CTRL>

Slows the screen scrolling on listings or directories. This command is standard in the Commodore 64.

Editing Command <SHIFT/LOCK>

Pauses the screen scrolling during a listing. This is a very useful command added by QUICKSILVER. Strike the command again to continue the scrolling of the listing.

Editing Command <SHIFT><RETURN>

Returns the cursor to the left side of the screen without executing the command or entering the line into the program.

Command <CTRL><RESTORE>

This command will initiate the NMI debugger. For more information on the NMI debugger please see page 19 of this manual or page 24 of the original 1541 FLASH! manual.

The NMI Debugging Aid

Introduction

This command is used to peek at what the processor is doing at any one moment. The NMI debugger will print the entire processor status on the screen at each NMI or when the <RESTORE> key is pressed. Use it to check on crash locations, questionable code and even errant IRQ routines, transparent to the host program except for a couple of missing cycles. If you wish to trace in real time, set up CIA #2 to generate continuous NMI's.

Example

```
        pha  ;save all processor registers
        txa
        pha
        tya
        pha  ;space for your own routine, such as
             ;checking the break key
        jmp $f7bd
                                          $f7bd
        ;print status and exit.
```

NMI Debug Details

To use this function, point the NMI vector at $0318-$0319 to the routine above. Data is printed on screen indirectly via locations $d0-$d1 (the BASIC editor screen pointer so do not worry about setting that up). After printing, the NMI debugger jumps to $ea81, returning from the interrupt. Data appears in the format - (.Y .X .A SR AL AH SP)-. Note that the NMI stuffs six things on the stack, the SP printed will read six too low.

General Notes

1) Bit 6 in the file type byte of a directory entry is a scratch protect. When it is set to a one the drive will not scratch the file even with a command like @s0:*.

2) A bug in the 6526 is "interrupt stomping" two interrupts can stomp on each other, with both thinking they happened (ie. timers are reset) but without telling the processor about it. On the 6522 the supposedly benign act of reading the IFR register can (and repeatedly does) reset flags and lines at inopportune moments.

3) Your software can identify a QUICKSILVER upgraded computer by checking $fff6 in the Kernal. It will contain a $4c. An old, slow, C-64 will have a $52 in the same location. Location $fff9 will have $ff, a old 64 will have $59.

Preface

One of the most frustrating features of the Commodore 64, for the serious programmer, is the lack of a built in machine language monitor. No more!! QUICKSILVER adds a machine language monitor to your computer. If you are not familiar with machine language and M.L. monitors, please see your local computer dealer or Skyles Electric Works for some excellent books written about M.L. programming. If you have no interest in M.L. programming do not bother to read this section of the QUICKSILVER manual. Some of the author's best friends use computers and don't care the least bit about machine language programming.

Command <!> <RET>

Typing a '!' followed by a 'return' will turn on FLASHMON!. At turn on you will be presented the monitor message:

FB50?

The numbers is the current BREAK address. The RAM test is not performed upon entering FLASHMON!.

Command SYS 61656 <RET>

Typing 'sys 61656' and a 'return' is an alternate method to enter FLASHMON!.

Command <C=><OFF-ON>

The truly hardcore M.L. may go directly to the monitor by holding down the 'C=' key (Commodore key) as you turn on your C-64. The added advantage of this command is that it will circumvent any installed autostart cartridge.

Command <X> <RET>

Example: x <RET>

Typing a 'x' and a 'return' will exit FLASHMON! without affecting the BASIC programs in the computer. This is the recommended method of exiting FLASHMON!, if it was entered from the '!' or 'sys 61656' command. If FLASHMON! was entered by holding down the Commodore (C=) key on turn on of the computer this command will not exit FLASHMON!. The next command should be used in these situations.

Command <X>,<C> <RET>

Example: xc <RET>

Typing a 'xc' and a 'return' will exit FLASHMON! and reset the Computer. This is the command to use to exit FLASHMON!, if it was entered by holding down the <C=> when the power was turned on.

Command <M> xxxx yyyy <RET>

Example: m 0800 0900 <RET>
Example: m b000 <RET>

This command will list 8 bytes per line and the poke code interpretation at the right. The listing will be in hexadecimal and will start at hexadecimal address xxxx and continue to hexadecimal address yyyy. The listing can be stopped using the Run/Stop key. If the ending address yyyy is not specified, five lines (40 bytes) will be listed.

Command <:> ssss hh hh <RET>

Example: : 0800 ea oo ff ad 12 34 b0 60 <RET>

This command allows you to modify any of the hexadecimal code listed by the 'm' command described above. This command will modify code stored in RAM memory, it will not modify code listed in ROM memory.

Command <G> xxxx <RET>

Example: g 1000 <RET>

This will start executing a code located at hexadecimal address xxxx. Normally a BRK command ends the code.

Command <Shift><G> xxxx <RET>

Example: G 2000 <RET>

This will start executing code located at hexadecimal address xxxx. Additionally the brk+2 address is placed on the stack. This enables the code to end with a RTS command and return to the BASIC interpreter.

Command <T> ssss eeee nnnn <RET>

Example t 2000 25f0 c000 <RET>
This command will transfer (copy) the contents of memory from ssss to eeee to memory starting at new location nnnn. It is possible to copy from ROM memory to RAM memory but not the reverse.

Command <T> ssss eeee-1 ssss+1 <RET>

Example t 2000 25ef 2001 <RET>
This method of using the transfer command gives the function of the fill command. This command will write the contents of ssss into all memory locations from ssss+1 through eeee.

Command <S> "DEF" 08 xxxx yyyy+1 <RET>

Example: s "def" 08 8000 9000 <RET>
This command will save the code starting at hexadecimal address xxxx and ending at hexadecimal address yyyy to the disk drive device $08. The program name assigned will be "def".

Command <L> "ABC" <RET>

Example: 1 "mikroman" <RET>
Example: 1 "zoom",09 <RET>

This will load a program from the disk drive device hexadecimal 08. The code will load into the memory area that it was saved from. If you wish to load from another disk drive with a device number other than hexadecimal 08 then the command should be; <L> "ABC" zz <RET> where zz is the device number in hexadecimal.

Command <L> "ABC" 08 xxxx <RET>

Example: 1 "zoom" 08 5000 <RET>
This will load a program from disk drive device hexadecimal 08. The code will be loaded into the memory starting at hexadecimal address xxxx regardless of the memory location that was saved from.

Command <V> "DEF" zz <RET>

Example: v "zoom" 08 <RET>
This command will verify that program DEF has been saved correctly to disk drive device hexadecimal zz . If the device number is not specified it is assumed to be $08.

Command <@> <RET>

This is the general form of the DOS commands. FLASHMON! supports all of these commands. For more information on these commands please see pages 13 through 16 of this manual. If FLASHMON! is entered by holding down the <C=> key on power up, the DOS commands will not work.

Command <> <RET>

The is the alternative form of the DOS/Wedge command discussed above. It is generally not recommended because it requires a simultaneous two key strike.

Command <CTRL><RESTORE>

This command will initiate the NMI debugger. For more information on the NMI debugger please see below or page 24 of the original 1541 FLASH! manual.

NMI Debugger

Wonder where your program hung up? Here is a means of finding out. Hold down 'CTRL' and hit 'restore'. The Y,X,A and Status registers, PCL/PCH and the stack pointer-6 will be printed on the screen in that order.

```
01 02 03 22 31 ea f0
```

In the above example the program was interrupted at $ea31 with the Y register containing $01, X $02 and the accumulator $03. The SR contained $22. The stack pointer was at $f6 ($f0 + $06)

General Notes

FLASHMON! allows commas, spaces, or dashes, for separators. For example;

<S> "DEF",08,xxxx-yyyy+1 <RET> works as well as the command given on page 24.

Memory Usage:

Loc	Usage
$9b	scratch
$9c	scratch
$b0	scratch
$b1	scratch
$0200	filename start address.

General Notes

FLASHMON! saves the above named registers upon turn on. FLASHMON! restores the registers when a <G> or <Shift><G> command.

All input is vectored to a routine at $02ac. If you wanted to look under the kernal or i/o you could change this routine...

```
          sei       ;How it is now
          lda ($b0),y
          rts

          sei       ;Routine to look under
ROM's
          ldx 1
          lda #$34
          sta 1
          lda ($b0),y
          stx 1
          rts

: 02ac 78 a6 01 a9 34 85 01 b1
: 02bc b0 86 01 60 00 00 00 00
```

Miscellaneous Notes

The default device number for a LOAD is 8. The default device number for a OPEN is 8 with a secondary of 15.

From FLASHMON! you can load a sequential file into memory with
1 "name,s,r" 08 0400.

All of the removable tape routines have been removed. You may still switch back to the old slow C-64 kernal for tape operations.

User Notes

QUICKSILVER INSTALLATION

Installation of your QUICKSILVER will take about 10 minutes. The following installation instructions are detailed and lengthy. Hopefully every question and concern that might come up is answered. For most Commodore 64's anybody familiar with the use of a phillips screwdriver can easily install the QUICKSILVER.

If you are concerned about "getting your fingers into" your Commodore 64 Computer, please have your local dealer install the QUICKSILVER. If your Computer is under its original 90 day Commodore warranty remember that if you carefully follow the installation instructions you can always return the Computer to its original condition without Commodore or the local dealer being upset. We don't recommend that you wait 90 days before you take advantage of the QUICKSILVER's fantastic IEEE loading speeds. You would also miss out on the 55 very useful added commands that you get with QUICKSILVER.

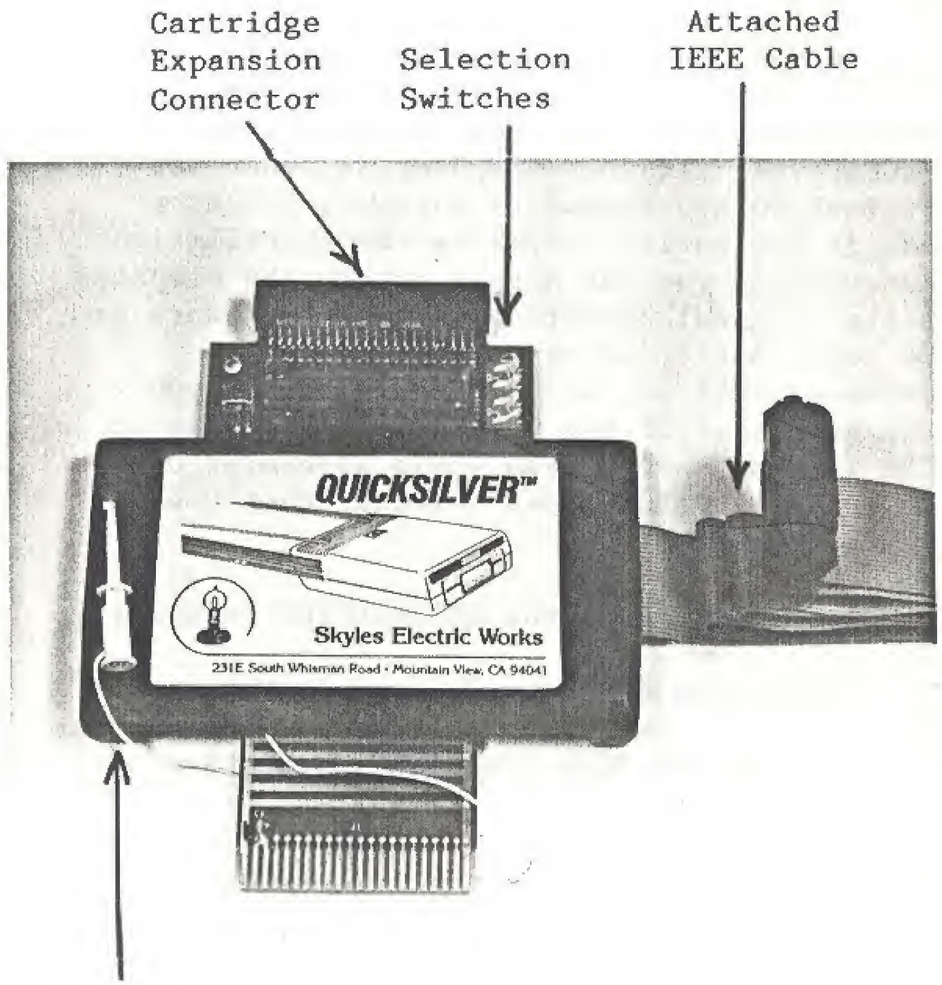
Installation of the QUICKSILVER requires:

A Phillips (Crosshead) screwdriver

LET US TURN THE PAGE AND BEGIN

Part Identification

In the style of the original Commodore PET computer, QUICKSILVER has every thing built into a single compact package.



Installation, Commodore 64

We will install QUICKSILVER onto the Commodore 64.

1) Unplug all cables, cartridges, and peripheral assemblies from your Commodore 64.

2) Place the Commodore 64 upside down on a well lighted surface. The front edge of the C-64 should be toward you.

3) Using the Phillips screwdriver remove the 3 screws located in wells along the front bottom of the C-64.

4) Holding the C-64 together at the front place it rightside up.

5) Now carefully lift the front top half of the C-64. This should unsnap the back catches. Set the top half of the C-64 about 3 inches forward.

6) If your Computer has the metalized cardboard inner cover untape it and open the cardboard. If your computer has a thin metal cover and heatshield, remove the five screws mounting screws. Place the heatshield upside down on a newspaper.

7) Holding your QUICKSILVER cartridge in one hand plug in the two white support feet, into the two holes, located in the green board (near the blue connector), at the back of the cartridge.

8) From behind your computer, poke the white microclip through the cartridge connector port. Poking it through at either side of the port is easiest.

9) Pulling the white wire out of the way, plug QUICKSILVER into the cartridge port of your computer. The QUICKSILVER label should be up, the IEEE cable to the right, and the blue cartridge extension connector furthest away from the computer. For more details see the pictures on the next pages.

10) There are three different styles of electronics boards inside the C-64. Using the pictures, on the next five pages, locate your style of electronic board.

Style 1; oldest C-64s, Assembly # 326298 (number small), pictures next page.

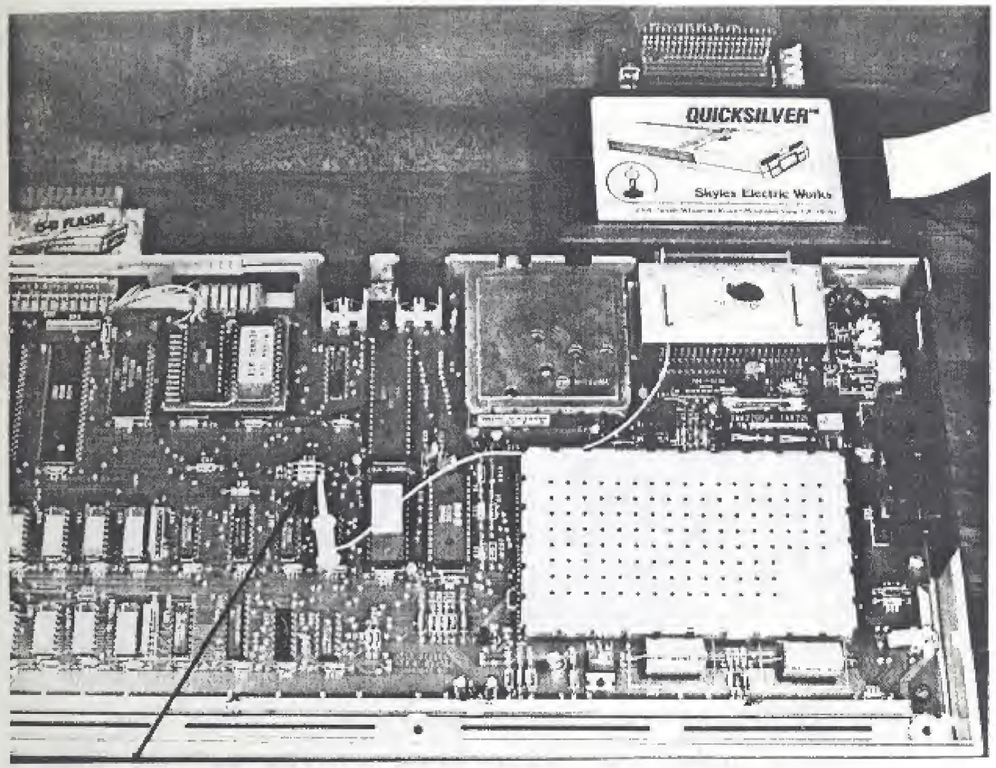
11) Locate resistor # R44, a small tan cylinder with two orange, one red, and one gold stripe. There are three identical resistors labeled (reading from the rear of the computer), R43,R45, and R44.

12) Squeezing the white microclip, hook the hook under the wire lead coming out of the right side of resistor R44. See next page for details.

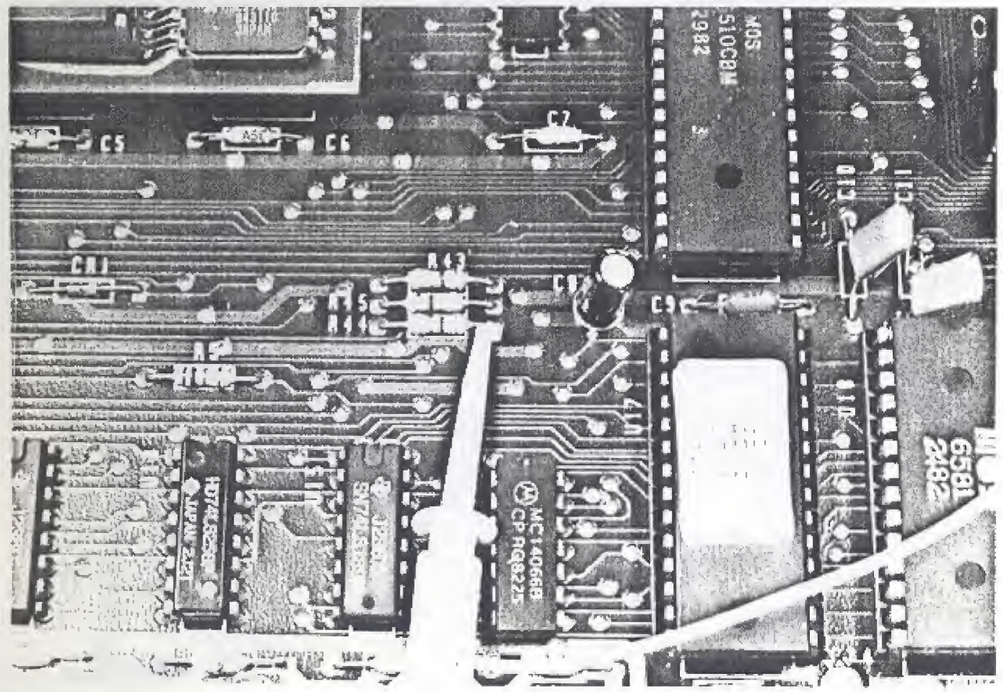
13) Check and reconnect if necessary the Keyboard cable and the power light cable connectors. Your C-64 should appear as shown in the accompanying pictures on the next page. Now is the time to check carefully the installation to this point.

14) Retape the metalized cardboard if required and replace, backside first, the top of your computer onto the bottom half of the housing. Check that both sides are lined up. If not, readjust the top.

Go to page 38.



R44 Quicksilver and Assy. #326298



Details R44 and Microclip, Assy. #326298

10) There are three different styles of electronics boards inside the C-64. Using the pictures, on the previous page and the next three pages, locate your style of electronics board

<u>Style 2;</u> newer C-64s, most common style, Assembly # 250407 (number in white, front of electronics board), pictures next page.

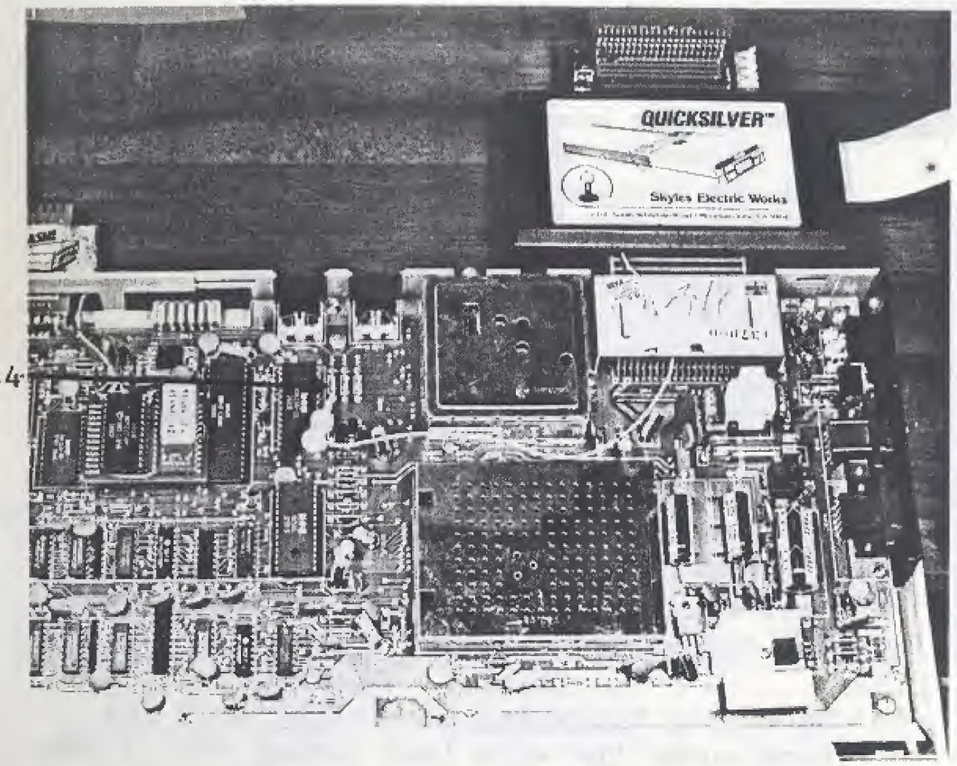
11) Locate resistor # R44, small tan cylinder with two orange, one red, and one gold stripe. There are three identical resistors labeled (reading from the left of the computer), R44,R45, and R43.

12) Squeezing the white microclip, hook the hook under the wire lead coming out of the front side of resistor R44. See next page for details.

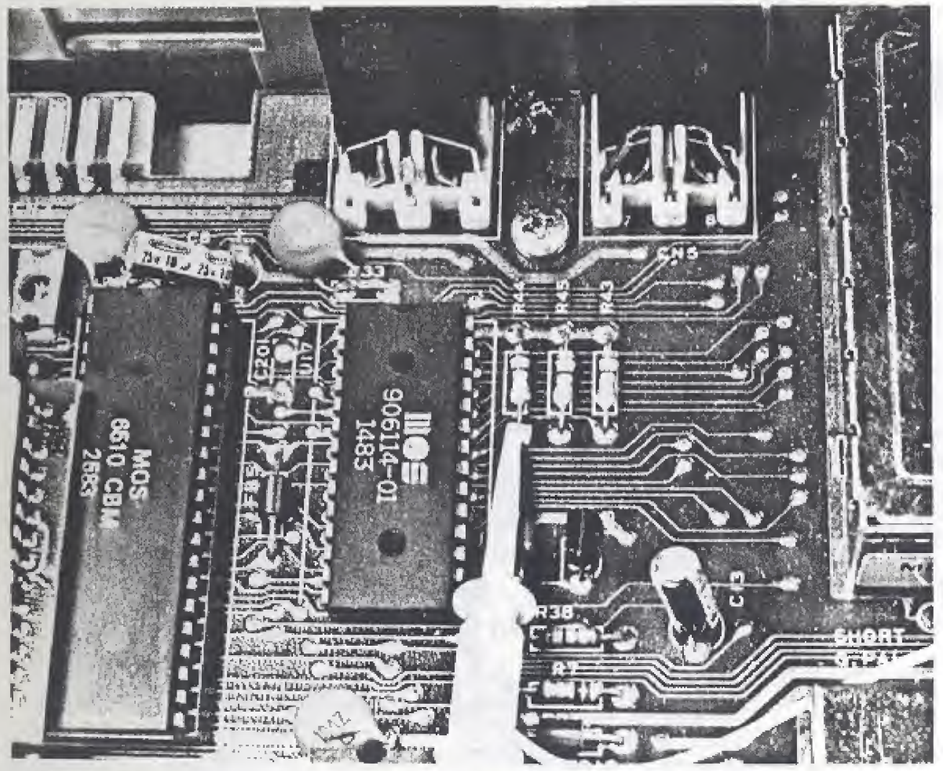
13) Check and reconnect if necessary the Keyboard cable and the power light cable connectors. Your C-64 should appear as shown in the accompanying pictures on the next page. <u>Now</u> is the time to check carefully the installation to this point.

14) Retape the metalized cardboard and replace, backside first, the top of your computer onto the bottom half of the housing. Check that both sides are lined up. If not, readjust the top.

<u>Go to page 38.</u>



Quicksilver and Assy. #250407



Details R44 and Microclip, Assy. #250407

10) There are three different styles of electronics boards inside the C-64. Using the pictures, on the previous three pages and the next page, locate your style of electronic board

<u>Style 3;</u> newest C-64s, sheetmetal heatshield-cover, Assembly # 250425, number in white, front of electronics board, pictures next page.

11) Locate resistor # R44, small tan cylinder with two orange, one red, and one gold stripe. There are three identical resistors labeled (reading from the rear of the computer), R43,R44, and R45.

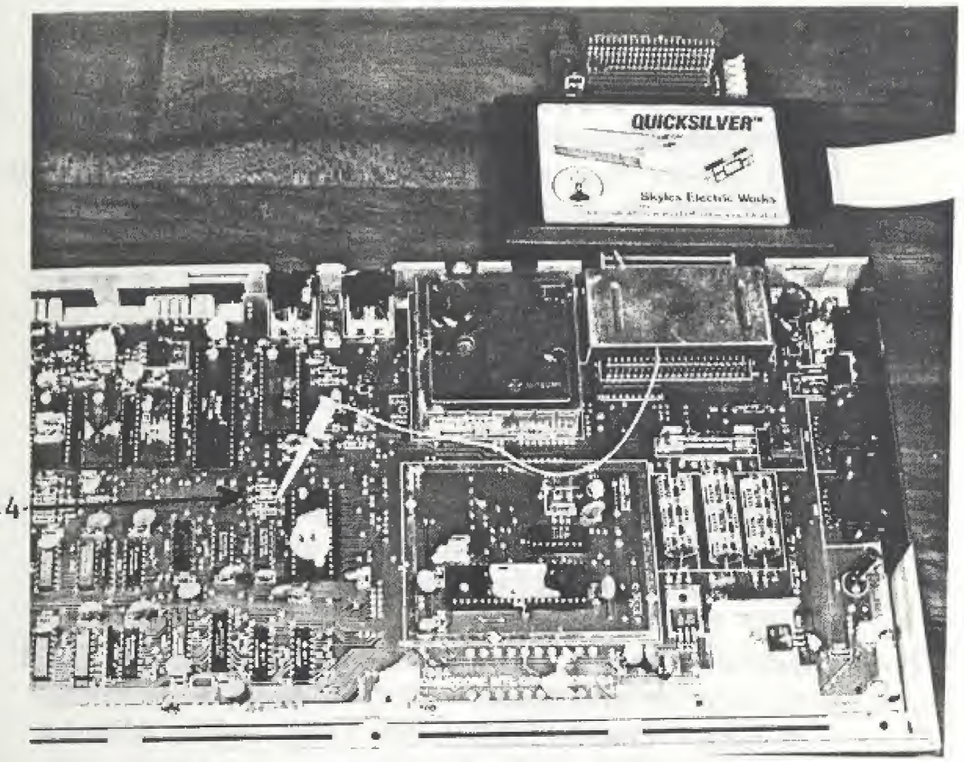
12) Squeezing the white microclip, hook the hook under the wire lead coming out of the <u>right</u> side of resistor <u>R44</u>. See next page for details.

13) Check and reconnect if necessary the Keyboard cable and the power light cable connectors. Your C-64 should appear as shown in the accompanying pictures on the next page. <u>Now</u> is the time to check carefully the installation to this point.

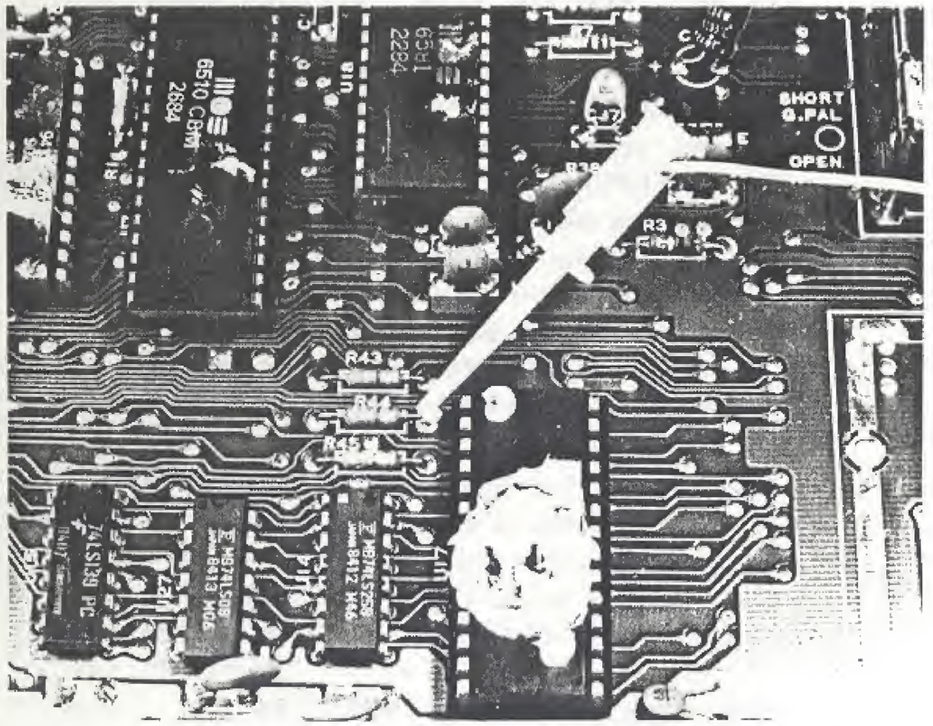
14) Replace the sheetmetal heatsink cover and install the five screws. Do not over tighten the screws. Do not leave out any screws.

15) Replace, backside first, the top of your computer onto the bottom half of the housing. Check that both sides are lined up. If not, readjust the top.

<u>Go to page 38</u>.



Quicksilver and Assy. #250425



Details R44 and Microclip, Assy. #250425

16) Carefully supporting the QUICKSILVER cartridge turn over your computer and reinstall the three screws that you removed from the 3 wells in the front edge of the bottom of your C-64. Do not over tighten these screws.

17) Turn your computer rightside up and return it to its normal operating location. Reconnect all cables and peripherals.

18) Place the four switches, in the red DIP switch bank at right rear of the QUICKSILVER cartridge, to the left.

19) Connect the 6 foot IEEE cable to your IEEE device or devices. If you have two IEEE devices the QUICKSILVER IEEE cable should be the last to be connected.

20) Turn on your C-64,disk drives, monitor or TV set, and any other peripherals.

21) Test your system by operating it. Everything should still work the same as before you began the installation of QUICKSILVER. If you do not observe normal operation of your system, recheck the installation of QUICKSILVER.

22) Push the RESET button located at the left rear of the QUICKSILVER cartridge. Observe that the computer resets.

23) Switch to the right the #1 Selection switch. switch #1 is located nearest the blue connector and farthest from the computer. Push the RESET button, and observe the QUICKSILVER turn on message.

*** COMMODORE 64 QUICKSILVER ***
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24) Now switch to the left:
Switch #2 if you have an IEEE disk drive set as device #8.
Switch #3 if you have an IEEE disk drive set as device #9 or #10.
Switch #4 if you have an IEEE printer set as device #4.
If you have two IEEE devices switch only one QUICKSILVER selection switch to the left at this time.

25) Now test your IEEE device. Use standard commands first then try the QUICKSILVER commands. Remember all IEEE devices connected to the IEEE bus need to be turned on, whether of not they are selected by the QUICKSILVER selection switches.

26) Now deselect your first IEEE device and select your second IEEE device. Test your second IEEE device.

27) If you have trouble with one of the tests described above, carefully recheck the installation instructions starting at step 1.

28) If you are still having trouble, remove QUICKSILVER. Test that this has return the computer to its original condition. Every QUICKSILVER is tested before leaving the factory, but mistakes can happen. Notify your local dealer for test and/or possible replacement of the QUICKSILVER.

29) In case of trouble you may also contact:

SKYLES ELECTRIC WORKS
231-E South Whisman Road
Mountain View, CA 94041
1-415-965 1735

between the hours of 1 and 6 PM Pacific Coast time.